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NCE & TECHNOLOGY:

COMPUTERS IN THE FEDERAL GOVERNMENT: A COMPILATION OF STATISTICS

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NBS Special Publication 500-7
U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards

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Computers in the Federal Government: A Compilation of Statistics

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Compiled by

Information Technology Division
Institute for Computer Sciences and Technology
National Bureau of Standards
Washington, D.C. 20234

U.S. DEPARTMENT OF COMMERCE, Juanita M. Kreps, Secretary
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COMPUTERS IN THE FEDERAL GOVERNMENT:
A COMPILATION OF STATISTICS

ABSTRACT

The material in this report is a compilation of some of the data on the status of computer technology in the Federal Government. This compilation is a combination of existing statistics from Federal Government and computer industry sources, and original statistics based on these sources. Information is included on numbers of computers installed in the Federal Government, dollar value of computers installed, numbers of computers installed by agency, Federal ADP costs by agency and minicomputers in the Federal Government.

Key Words: Federal Government computers; statistics; ADP costs; Federal minicomputers; Federal ADP statistics

PREFACE

The material in this report is a compilation of some of the data on the status of computers in the Federal Government and the private sector. This compilation is a combination of existing statistics from Federal Government and computer industry sources, and original statistics based on these sources. Information is included on numbers of computers installed in the Federal Government, dollar value of computers installed, numbers of computers installed by agency, Federal ADP costs by agency, and minicomputers in the Federal Government.

This report is a first attempt in sharing this kind of information; the Institute for Computer Sciences and Technology plans to share other such compilations of data which it continually gathers in the course of its activities, for its own needs and responsibilities.

The author of this compilation is Martha M. Gray of the Computer Information Section, ably assisted by Paul Majewski of the Section. Other Section staff members involved were Peter Calomeris, who helped in the preparation of some of the graphs, and Barbara Peterson and Pamela Forder, who assisted with manuscript preparation.

Special thanks for their assistance and cooperation are due Alvin Krakow, General Services Administration; Walter Haase and Boyd Alexander, Office of Management and Budget; and Walter Anderson, General Accounting Office.

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Summary of Findings

- In Fiscal Year 1975 there were over 8000 computers in use in the Federal Government.
- The dollar value of the computer systems in the Federal Government was $4.04 Billion in FY 75.
- In Fiscal Year 1975 there were over 190,000 computers in use in the United States.
- The dollar value of the computer systems in the U.S. was approximately $35.7 Billion for FY 75.
- The number of computers in the Federal Government is increasing at a greater rate than the dollar value of the computer systems and will probably continue to do so.
- The number of computers in the U.S. is increasing at a rate twice greater than the rate of the growth of the dollar value of the installed base.
- The percentage of computers in the Federal Government compared to the U.S installed base has dropped from 10% in 1967 to less than 5% in 1975.
- The percentage of the dollar value of computer systems in the Federal Government compared to the dollar value of the U.S. computer systems has dropped from almost 13% in 1970 to about 11% in 1975.
- The Department of Defense continues to have the largest percentage of Federal computers among agencies and continues to show the largest ADP costs.
- Minicomputers now represent about 55% of the Federal inventory.
- Over the last eight years Federal minicomputers have grown with an average yearly growth rate of 22%.
- Federal computers costing over $50K have grown over the last eight years with an average yearly growth rate between 3% and 8%.
- The major areas for computer installations in the U.S. are business, trade and manufacturing.

I. General Introduction and Background of Sources

The Institute for Computer Sciences and Technology serves as the Federal Government focal point for computer technology activities. The Institute programs are designed to provide standards and guidelines and technical advisory services to improve the effectiveness of computers and computer applications in the Federal Government. Appropriate research provides the foundation for these activities.

In the process of conducting its program, the Institute collects data from a variety of sources on the status of computer technology, the extent of computer use in the government and private sectors, and the projected trends in the technology and applications areas. These data are analyzed from a number of points of view in order to support ICST efforts in developing standards and guidelines and in providing technical advisory services. The analyzed data and resulting graphs and charts have proved most useful to ICST personnel.

It is in the light of its own experience with the utility of these data and analyses that ICST has prepared this publication. The compilation of data on computers in the Federal Government will, it is believed, be of general interest within and outside the Federal Government computer community.

The main sources of statistical information on computers in the Federal Government used in this report are:

- General Services Administration (GSA) - Statistics on numbers of computers in the Federal Government, value of Federal computer systems and annual costs of Federal agencies were taken from GSA publications or provided by the agency. [1,2]*

- General Accounting Office (GAO) - Statistics on minicomputers in the GAO report on minicomputer use in the Federal Government [3] were analyzed and either included in this report or extrapolated for purposes of this report.

GSA figures are categorized by a management classification scheme to identify systems operated under a wide variety of operational environments. The General Management Classification identifies systems which are used in a general utility environment. The Special Management Classification identifies systems used in various operational environments such as control, classified and mobile. [1]

One of the aspects of this report is the relation of numbers of Federal computers to the total U.S. installed base of computers. The primary source of U.S. figures utilized is the annual Review and Forecast issue of EDP Industry Report, a publication of International Data

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*Numbers in brackets refer to references listed at the end of the report.

Corporation [4]. The statistics given in that issue are listed for the end of the calendar year, and have been extrapolated for this report to estimate census figures for the fiscal year.

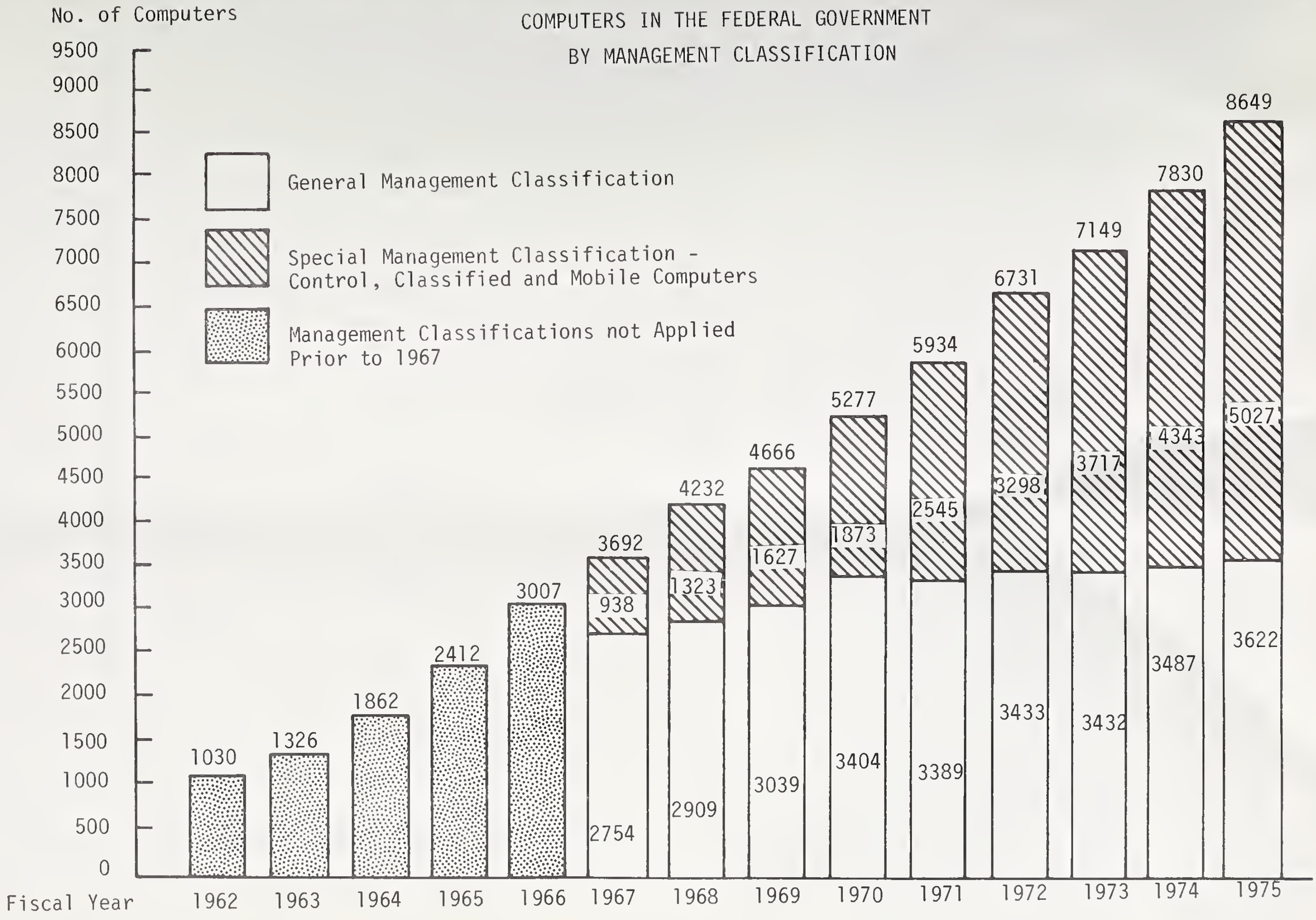
International Data Corporation classifies computers into two categories, general-purpose computer market and dedicated-application computer market. The computers included in the general-purpose category "comprise the bulk of digital computers (by value) in operation. They are byte or character oriented -- except for large-scale scientific computers that have large words -- and are primarily programmed in higher-level languages"; the computers in the dedicated application category "are those commonly referred to as minicomputers, plus certain larger systems designed primarily for one application such as process control, data communications, or data entry." [4]

II. Compilation of Relevant Statistics

A. Federal Government Statistics

Figure 1 summarizes the numbers of computers in the Federal inventory from FY 1962 to FY 1975 and the classification of these computers. This figure shows that the number of special management computers has greatly increased since the classification scheme was established. It also shows that the number of computers in use in the Federal Government in 1975 is more than eight times the number used in 1962.

Figure 2 shows the growth rate for six years of the numbers of computers (CPUs) and the dollar value of Federal computer systems. For this time frame the numbers of computers in the inventory have been increasing by an average of 674 per year for an average yearly growth rate of a little over 10%. (The growth rate is based on the increase in units for one year compared to the installed base the year before. The average yearly growth rate may also be called the average compound growth rate.) The dollar value of the computer systems has been increasing on an average $.248 Billion per year for an average yearly growth rate of almost 8%. With the increase of computers costing under $50K in the inventory (see Section III E, "Analysis of Minicomputers in the Federal Government") the numbers of computers will continue to grow at a much greater rate than the dollar value of the computer systems.


COMPUTERS IN THE FEDERAL GOVERNMENT
BY MANAGEMENT CLASSIFICATION

Source: GSA Inventory 1975

Figure 1

GROWTH RATE OF COMPUTER SYSTEMS IN THE FEDERAL GOVERNMENT BY NUMBERS OF CPUs AND DOLLAR VALUE

Fiscal Year	Total Number of CPUs	Number CPUs added per year	Growth Rate (%)	Total Value of Computer Systems ($Billions)	$ added per year ($Billions)	Growth Rate (%)
1970	5277			$2.801		
		657	12.45		.271	9.67
1971	5934			3.072		
		797	13.43		.122	3.97
1972	6731			3.194		
		418	6.21		.266	8.33
1973	7149			3.460		
		681	9.52		.340	9.83
1974	7830			3.80		
		819	10.45		.240	6.32
1975	8649			4.04		
Average		674	10.41%		.248	7.63%

Figure 2

B. U.S. Statistics

Figures 3 and 4 summarize the basic statistics on U.S. computers used in this report. Figure 3 shows the numbers of computers installed in the U.S. from 1967 to 1975. It shows the dramatic increase in the number of dedicated-application computers and consequently the dramatic increase in the total installed base.

Figure 4 shows the growth rate for six years of the numbers and the dollar value of U.S. installed computer systems. For this time frame an average of over 25,000 computer systems were added to the installed base per year, for an average yearly growth rate of almost 25%. During the same time frame, the dollar value of the installed computer systems increased on an average of almost $3 Billion per year, for an average yearly growth rate of over 10%. Since the numbers of computer systems reflect the large growth of dedicated-application computers which include most of the minicomputers, the growth rate of the numbers of computer systems should continue to be larger than the growth rate of the dollar value.

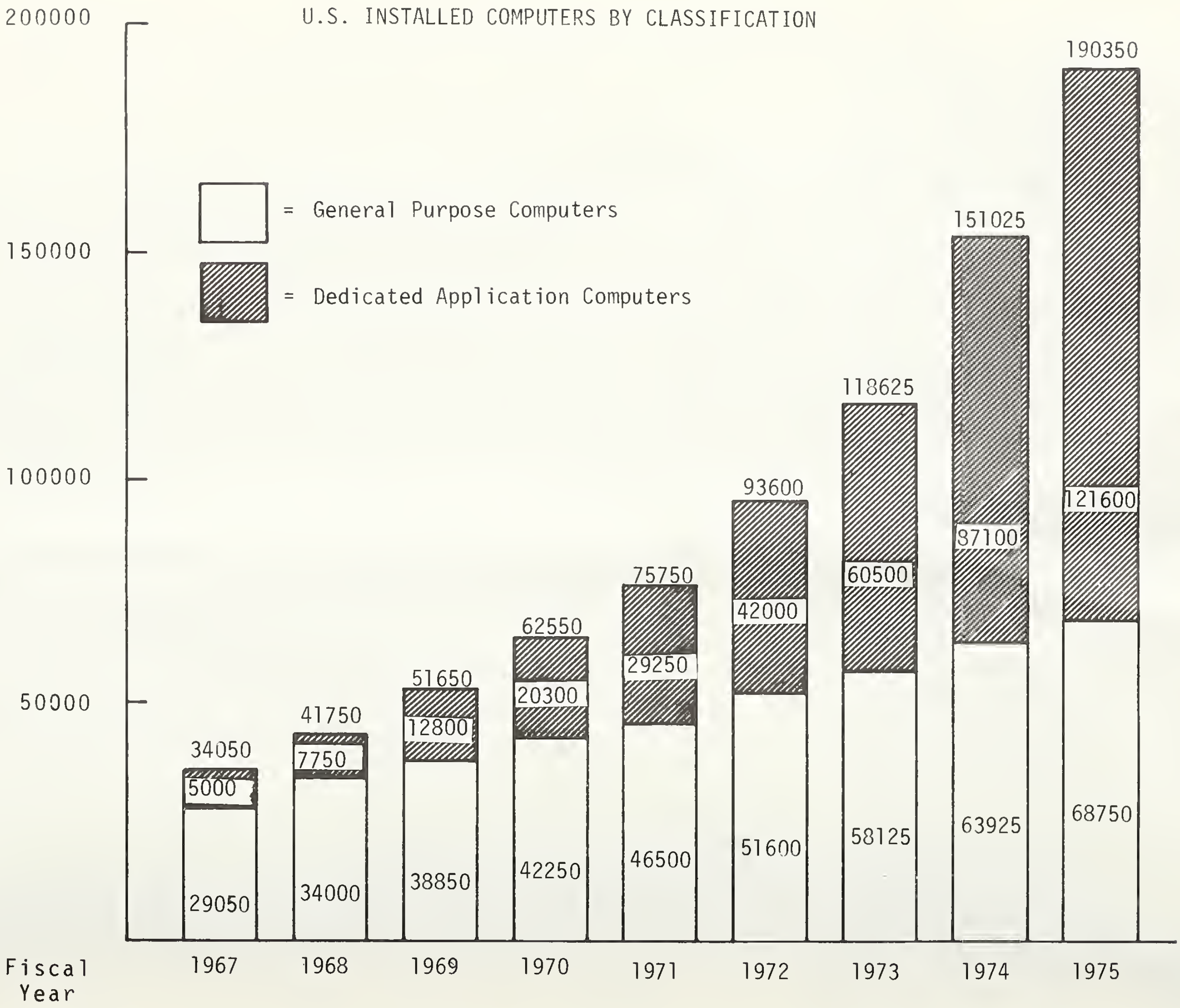

U.S. INSTALLED COMPUTERS BY CLASSIFICATION

Figure 3

GROWTH RATE OF COMPUTER SYSTEMS IN THE U.S. BY NUMBER AND DOLLAR VALUE

Fiscal Year	Number of Computer Systems	Number added per year	Growth Rate (%)	Total of Dollar Value ($Billions)	$ added per year ($Billions)	Growth Rate (%)
1970	62550			21.65		
		13200	21.10		2.40	11.08
1971	75750			24.05		
		17850	23.56		1.90	7.90
1972	93600			25.95		
		25025	26.73		2.40	9.24
1973	118625			28.35		
		32400	27.31		3.40	11.99
1974	151025			31.75		
		39325	26.03		3.95	12.44
1975	190350			35.70		
Average		25560	24.95%		2.81	10.53%

Figure 4

III. Analysis of Statistics

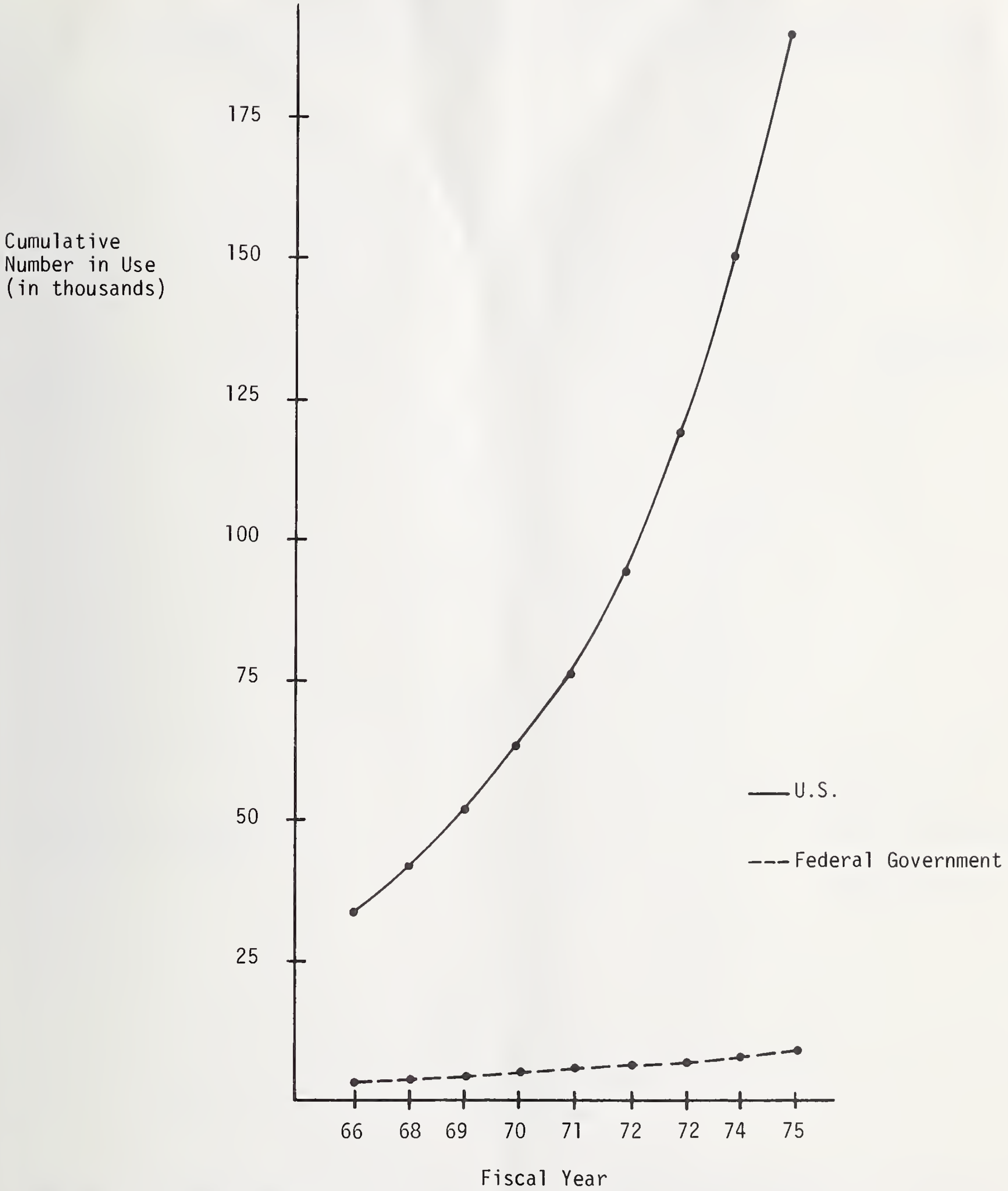
A. Comparison of U.S. installed computers with Federal Government computers by numbers of CPUs.

Figures 5, 6, and 7 show graphically the number of computers installed in the U.S. To further enumerate the size of the Federal installed base as part of the U.S. installed base, the percentage of Federal computers is compared with U.S. computers, using GSA figures and IDC figures. From 1967 to 1975 the total Federal figures have gone from 10% of the U.S. installed base to 4.5%.

It is of interest also to divide the computers into categories, comparing the IDC general-purpose and dedicated-application categories with the GSA general management and special management categories. (The two classification schemes are not synonymous, since one classifies the machine (IDC) and the other (GSA) classifies the function of the machine as specified by the agency.) From 1967 to 1975 the Federal general management computers went from 9% of the U.S. general-purpose computers to 5%, and the special management computers from 18% of the dedicated-application computers to 4%. Thus, the number of Federal computers as a percentage of the U.S. installed computers today is half what it was eight years ago. While the U.S. installed base has better than quintupled in eight years, the Federal base has only slightly more than doubled (see Figure 8).

TOTAL COMPUTERS INSTALLED

(Federal Government Computers[1] - U.S. Installed Computers[2])

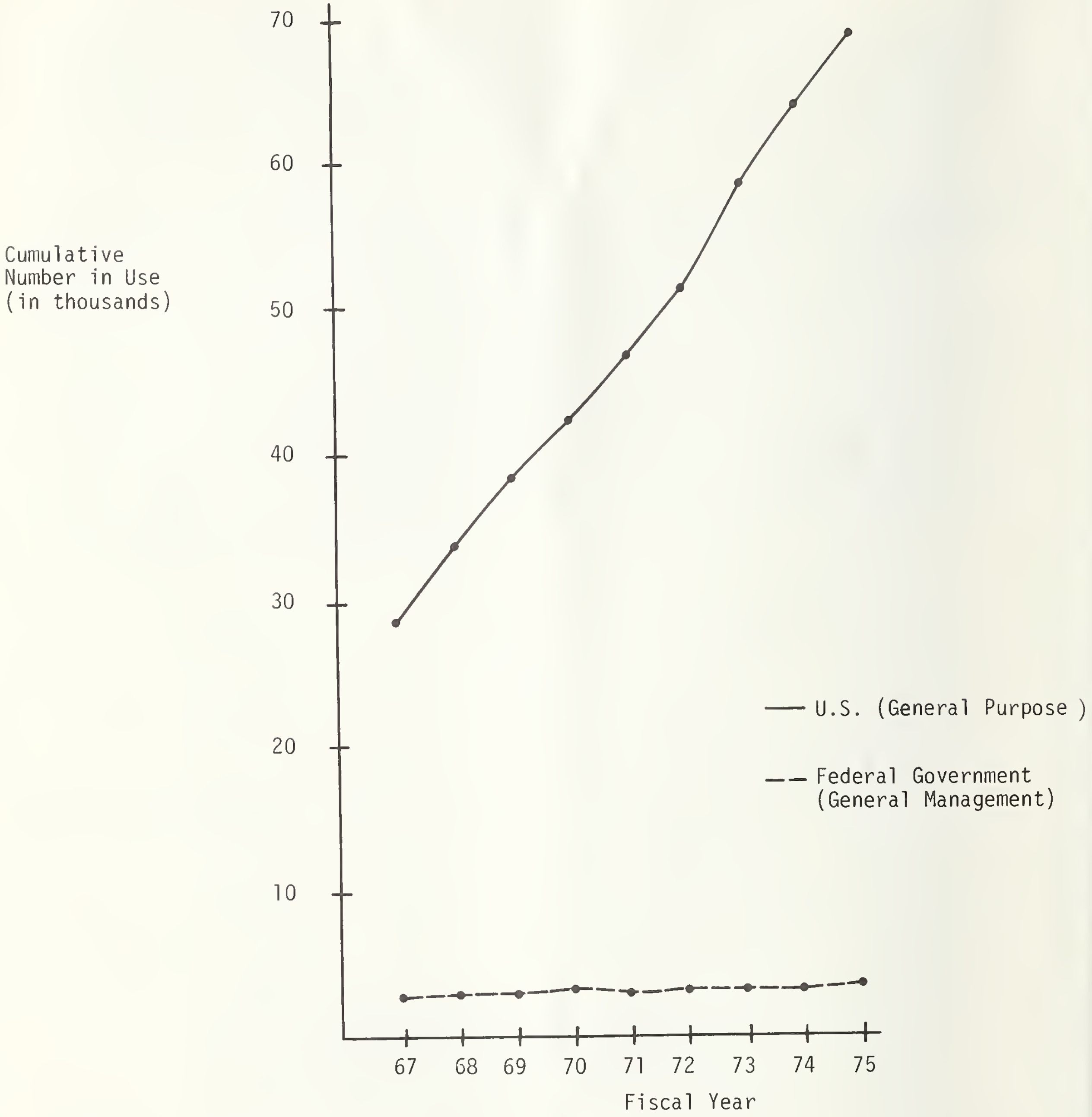


Sources: 1. GSA Inventory 1975
2. EDP Industry Report, April 30, 1976

Figure 5

COMPUTERS INSTALLED BY CLASSIFICATION

(Federal General Management Computers[1] - General Purpose U.S. Computers[2])

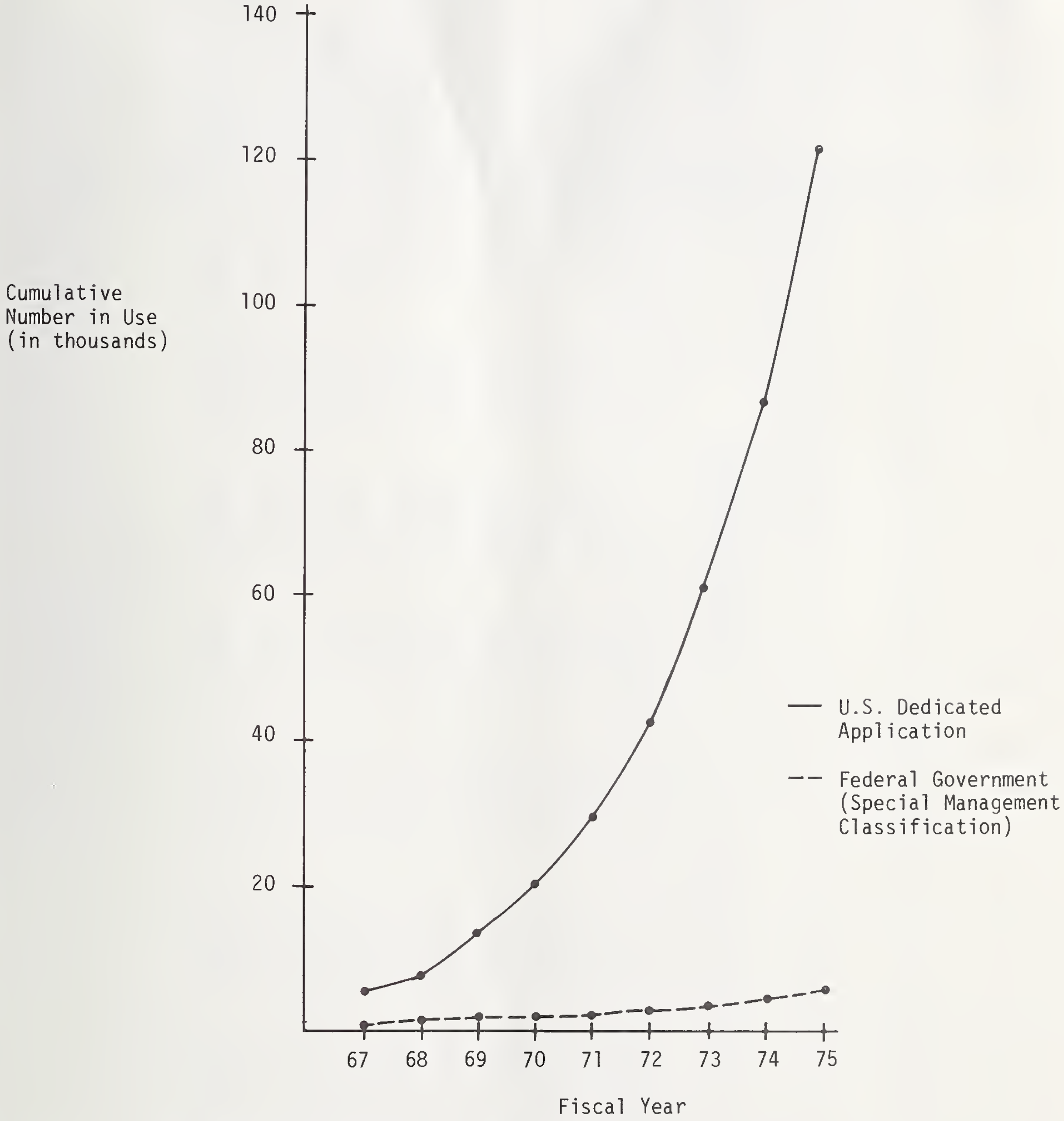


Sources: 1. GSA Inventory 1975
2. EDP Industry Report, April 30, 1976 and April 19, 1974.

Figure 6

COMPUTERS INSTALLED BY CLASSIFICATION

(Federal Special Management Computers[1] - Dedicated-Application U.S. Computers[2])



Sources: 1. GSA Inventory 1975
2. EDP Industry Report April 30, 1976 and April 19, 1974

Figure 7

COMPARISONS OF U.S. INSTALLED COMPUTERS WITH FEDERAL GOVERNMENT COMPUTERS BY NUMBERS OF CPUs

	Total Computers Installed			Computers Installed by Classification					
				(General Management/ General Purpose)			(Special Management/ Dedicated-Application)		
Fiscal Year	Fed. Gov't.	U.S.	%	Fed. Gov't.	U.S.	%	Fed. Gov't.	U.S.	%
67	3692	34050	10.84	2754	29050	9.48	938	5000	18.78
68	4232	41750	10.13	2909	34000	8.55	1323	7750	17.07
69	4666	51650	9.03	3039	38850	7.82	1627	12800	12.71
70	5277	62550	8.43	3404	42250	8.05	1873	20300	9.22
71	5934	75750	7.83	3389	46500	7.28	2545	29250	8.70
72	6731	93600	7.19	3433	51600	6.65	3298	42000	7.85
73	7149	118625	6.02	3432	58125	5.90	3717	60500	6.14
74	7830	151025	5.18	3487	63925	5.45	4343	87100	4.98
75	8649	190350	4.54	3622	68750	5.26	5027	121600	4.13

Figure 8

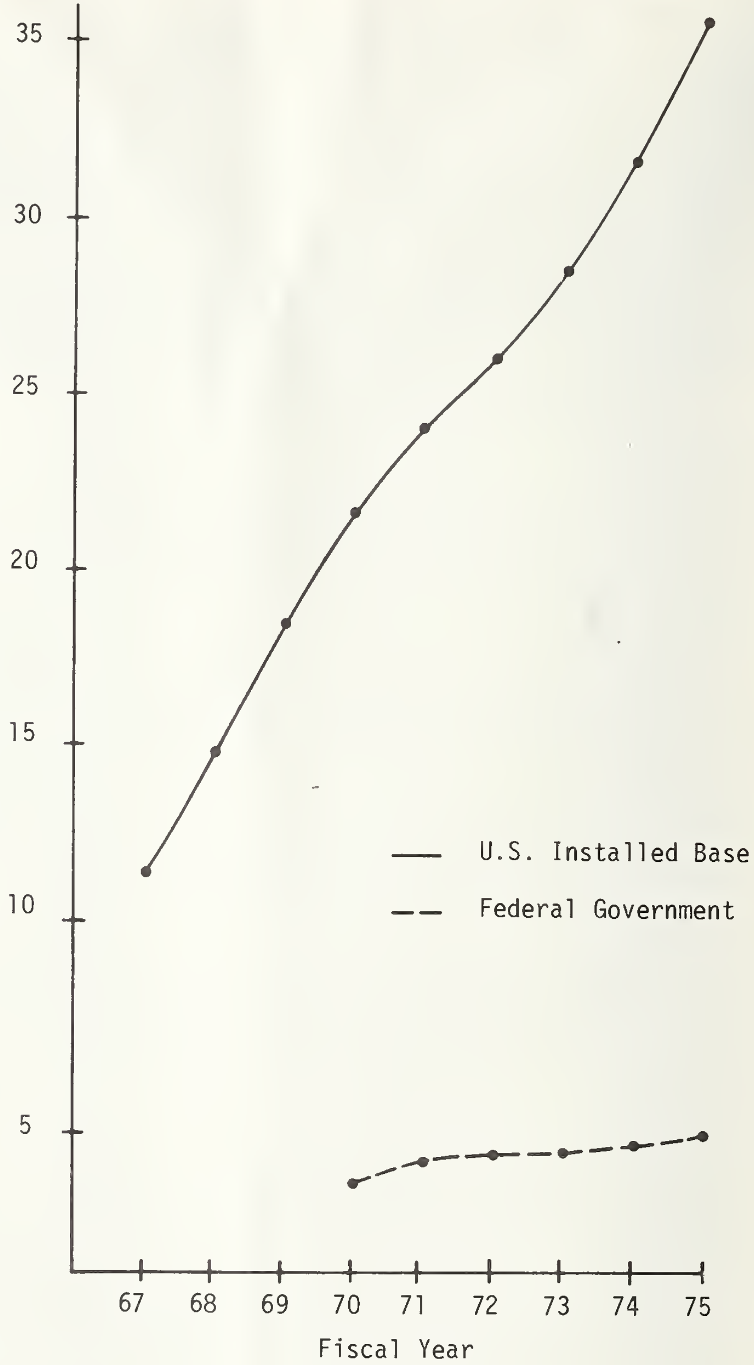
B. Comparisons of U.S. installed computer systems with Federal computer systems by dollar value.

Charts 9, 10 and 11 show graphically the dollar value of Federal computer systems compared with the dollar value of U.S. installed computer systems. The figures for Federal computer systems are based on the totals from the GSA charts, "Computer Systems by Purchase Price Range," in recent inventories and on information obtained from Alvin Krakow for the other years. The figures for the U.S. installed computer systems are from International Data Corporation's category, "$Billion Value in Use."

The percentages of the $ value of Federal computer systems for the years FY70-FY75 (Figure 12) has declined in these six years but not as significantly as the numbers of computers (shown in Section III A).

TOTAL DOLLAR VALUE OF COMPUTER SYSTEMS INSTALLED (in $Billions)

(Federal Government Computers[1] - U.S. Installed Computers[2])

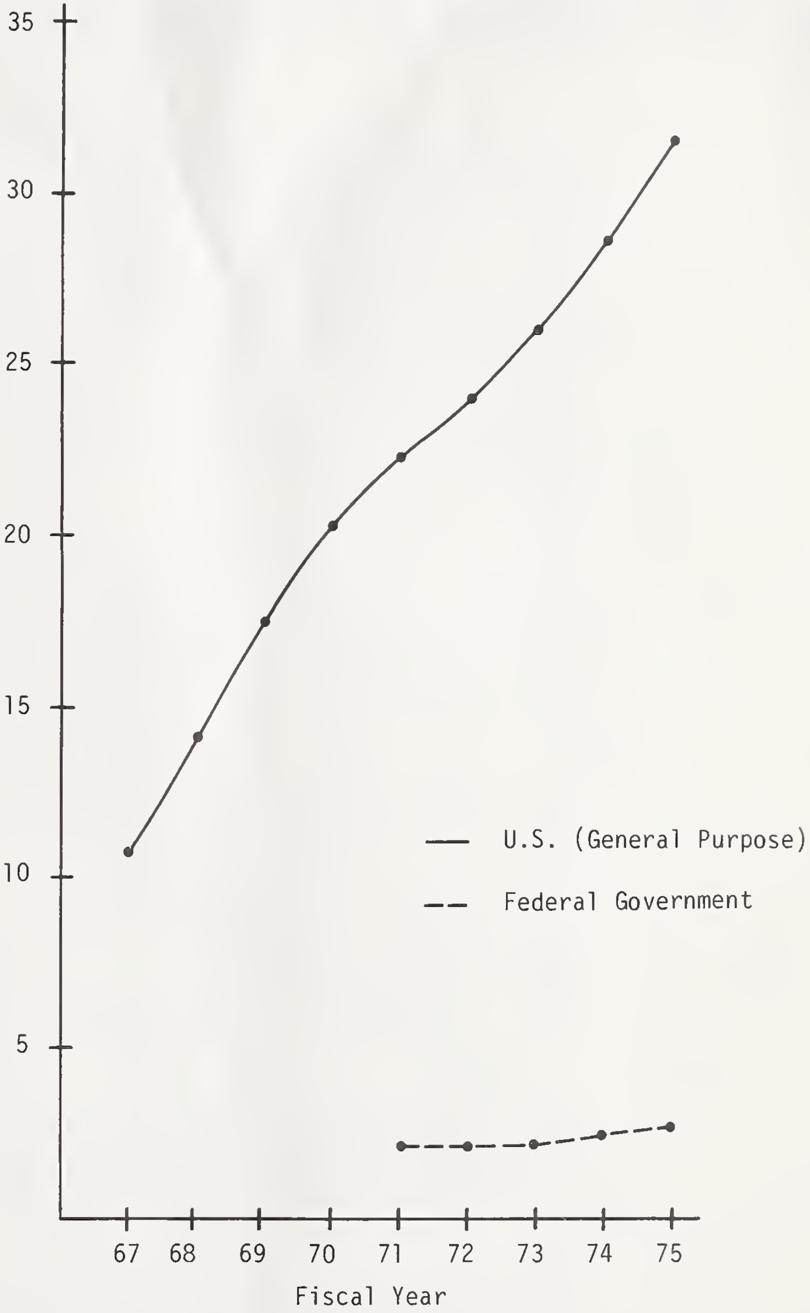


Sources: 1. General Services Administration
2. EDP Industry Report, April 30, 1976 and April 19, 1974.

Figure 9

DOLLAR VALUE OF COMPUTER SYSTEMS INSTALLED BY CLASSIFICATION (in $Billions)

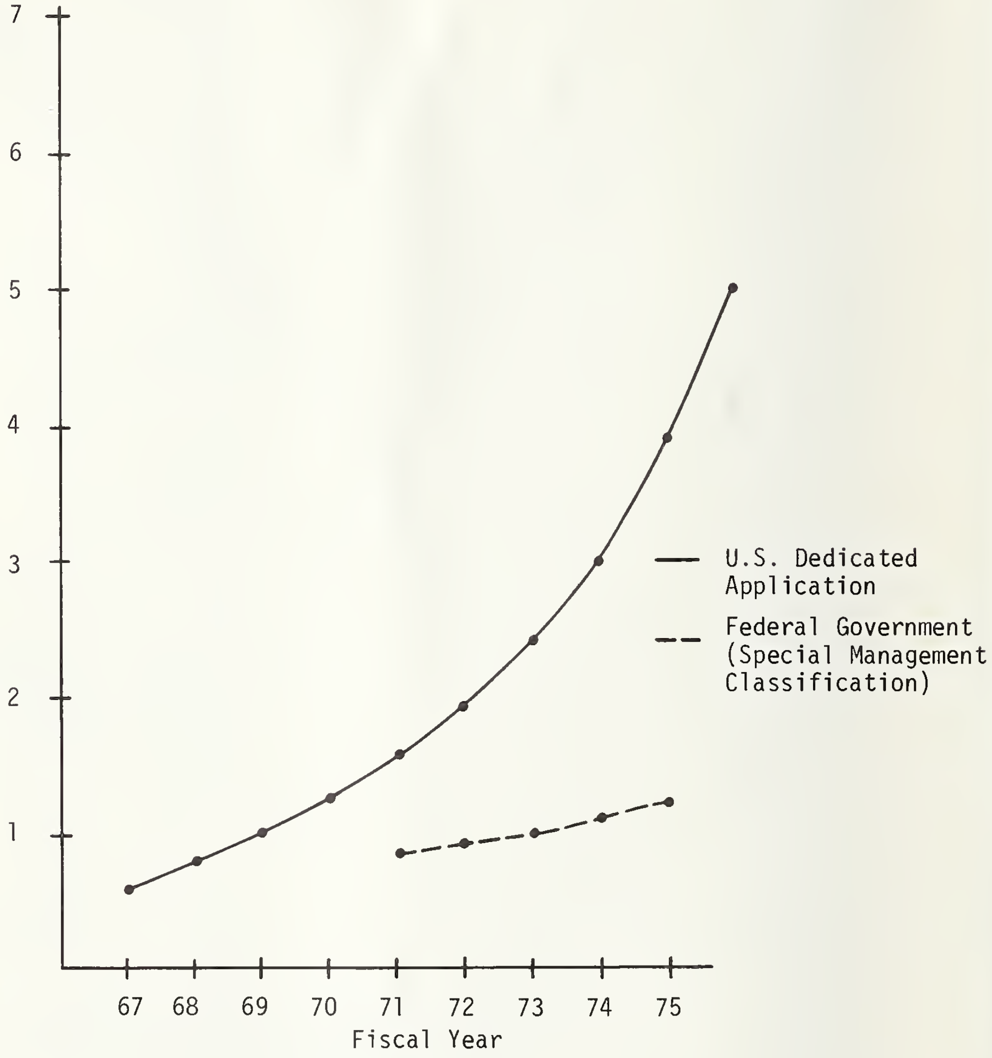
(Federal General Management Computers[1] - General Purpose U.S. Computers[2])



Sources: 1. General Services Administration
2. EDP Industry Report, April 30, 1976 and April 19, 1974.

Figure 10

DOLLAR VALUE OF COMPUTER SYSTEMS INSTALLED BY CLASSIFICATION (in $Billions)
(Federal Special Management Computers[1] - Dedicated-Application U.S. Computers[2])



Sources: 1. General Services Administration
2. EDP Industry Report, April 30, 1976 and April 19, 1974.

Figure 11

COMPARISONS OF U.S. COMPUTER SYSTEMS WITH FEDERAL GOVERNMENT COMPUTER SYSTEMS BY DOLLAR VALUE (IN $BILLIONS)

	Total Computers Systems			Computer Systems Installed by Classification					
				(General Management/ General Purpose)			(Special Management/ Dedicated-Application)		
Fiscal Year	Fed. Gov't.	U.S.	%	Fed. Gov't.	U.S.	%	Fed. Gov't.	U.S.	%
70	$2.801	$21.65	12.94						
71	3.072	24.05	12.77	$2.274	$22.40	10.15	$.798	$1.65	48.36
72	3.194	25.95	12.31	2.277	24.00	9.49	.914	1.95	46.87
73	3.460	28.35	12.20	2.42	26.00	9.31	1.04	2.35	44.26
74	3.80	31.75	11.97	2.70	28.75	9.39	1.10	3.00	36.67
75	4.04	35.70	11.32	2.89	31.85	9.07	1.15	3.85	29.87

Figure 12

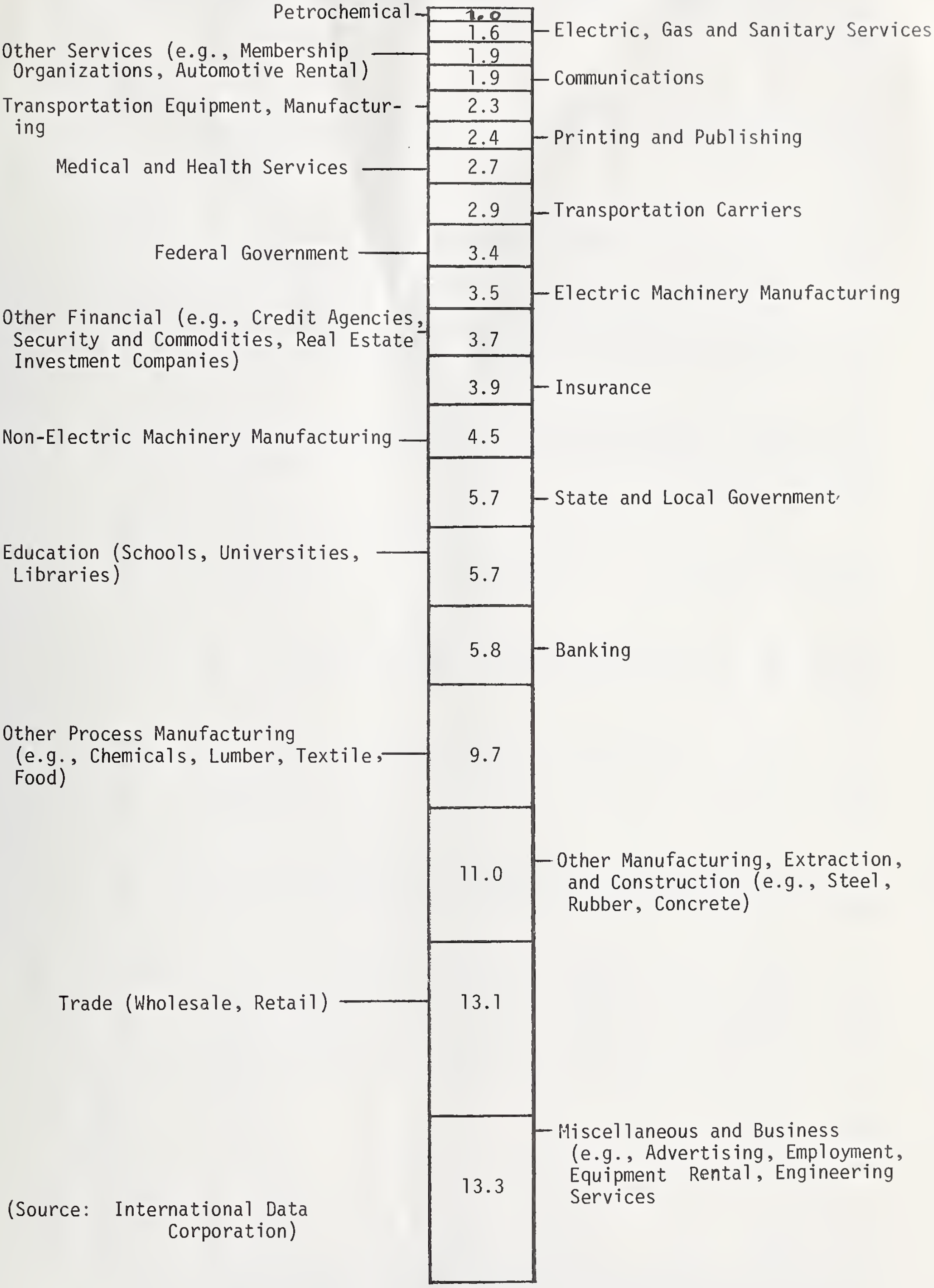
C. Analysis of numbers of computers by SIC code and agency installations

There is no direct way to compare how computers are being used in the Federal Government with those in the private sector. International Data Corporation (IDC) provided figures for the number of general-purpose computers installed by Standard Industrial Classification (SIC) code and the percentage of the total installed base represented by each major SIC grouping as of December 31, 1975. These percentages, as presented in Figure 13, show that business, trade and manufacturing are the major areas for general-purpose computer installations. The Federal Government category is listed as 3.4% of the total installed base. However, the figures for IDC are based on December 31, 1975 figures except for the Federal Government which is based on June 30, 1975 figures. Since the total installed base had grown by approximately 3000 computers between June and December this made the Federal percentage smaller. Also, IDC considers only about 70% of the computers GSA lists as general management to be general-purpose. Thus, this lowers the Federal Government percentage on the SIC figure.

The only available statistics on where Federal computers are being used is a compilation of numbers of computers by agency. These statistics are presented in Figure 14, which shows the number of computers installed at the end of each of the fiscal years 1966 through 1975 for DOD and the ten civilian agencies which have the largest number of installed computers. In addition, the numbers of computers have been translated into the percentages to the total inventory (Figure 15), in order to show which agencies were gaining or losing computers in proportion to other agencies. These same figures are also presented graphically in Figure 16.

For ten of the eleven agencies the number of computers installed in FY75 reflects an increase ranging from 100% to 900% of the FY66 figures. The other agency, GSA, showed a negligible increase. Three agencies, DOD, ERDA, and NASA, which had the largest number of installed computers in FY66, continued throughout the past decade to have the largest number of computers totaling from 90% to 84% of all non-classified government computers. DOD remains the largest computer user among Federal agencies but ERDA now has more computers installed than does NASA. Although DOD and NASA both roughly doubled their installed computer base, their percentage of Federal computers decreased (by 15% and 3% respectively) since the number of computers in government nearly tripled (from 1 to 3 thousand). Commerce, ERDA, Transportation and Veterans Administration increased their installed computer base by factors of six, four, ten, and seven, respectively, while the rest of the civilian agencies taken as a group increased its base threefold.

INDUSTRY PERCENTAGE BY SIC CODE OF TOTAL U.S. GENERAL PURPOSE CPUs



(Source: International Data Corporation)

Figure 13

ANNUAL FEDERAL INSTALLED COMPUTER BASE BY AGENCY

	FY66	FY67	FY68	FY69	FY70	FY71	FY72	FY73	FY74	FY75
Agriculture	28	32	37	39	42	68	66	61	58	56
Commerce	47	41	53	59	73	99	142	170	241	294
DOD	1923	2335	2694	2898	3199	3415	3733	3791	4007	4245
ERDA	256	324	415	559	754	954	1148	1311	1574	1904
GSA	24	31	24	27	27	33	29	30	29	28
HEW	45	57	80	84	96	88	67	94	104	134
Interior	27	34	35	47	46	39	51	55	70	69
NASA	489	616	639	642	692	812	934	991	1028	1114
Transportation	31	58	61	100	118	149	236	287	296	317
Treasury	58	52	59	68	77	90	106	122	124	150
VA	17	29	35	40	41	64	77	88	99	126
Other Civil	62	83	100	103	112	150	142	149	200	212
Total No. of Computers	3007	3692	4232	4666	5277	5961[1]	6731	7149	7830	8649

1. For FY72 and for each fiscal year thereafter, the GSA Inventory reported the total number of computers in FY71 to be 5934.

Source: Data for FY66 thru FY69 in the GSA Inventory, FY69; Data for FY70 thru 1975 in the GSA Inventories FY70 thru FY75 respectively.

Figure 14

AGENCY PERCENTAGE OF ANNUAL FEDERAL INSTALLED COMPUTER BASE

	FY66	FY67	FY68	FY69	FY70	FY71	FY72	FY73	FY74	FY75
Agriculture	.93	.87	.87	.83	.80	1.14	.98	.85	.74	.65
Commerce	1.56	1.11	1.25	1.26	1.38	1.66	2.11	2.38	3.08	3.40
DOD	63.95	63.24	63.66	62.11	60.62	57.29	55.46	53.03	51.18	49.08
ERDA	8.51	8.78	9.81	11.98	14.29	16.00	17.06	18.34	20.10	22.01
GSA	.80	.84	.57	.58	.51	.55	.43	.42	.37	.32
HEW	1.50	1.54	1.89	1.80	1.82	1.48	.99	1.32	1.33	1.55
Interior	.90	.92	.83	1.01	.87	.66	.76	.77	.89	.80
NASA	16.26	16.68	15.10	13.76	13.11	13.62	13.88	13.86	13.13	12.88
Transportation	1.03	1.57	1.44	2.14	2.24	2.50	3.51	4.01	3.78	3.67
Treasury	1.93	1.41	1.39	1.46	1.46	1.51	1.57	1.71	1.58	1.73
VA	.57	.79	.83	.86	.78	1.07	1.14	1.23	1.27	1.46
Other Civil	2.06	2.25	2.36	2.21	2.12	2.52	2.11	2.08	2.55	2.45
Total Percentage	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Figure 15

AGENCY PERCENTAGE OF ANNUAL FEDERAL INSTALLED COMPUTER BASE

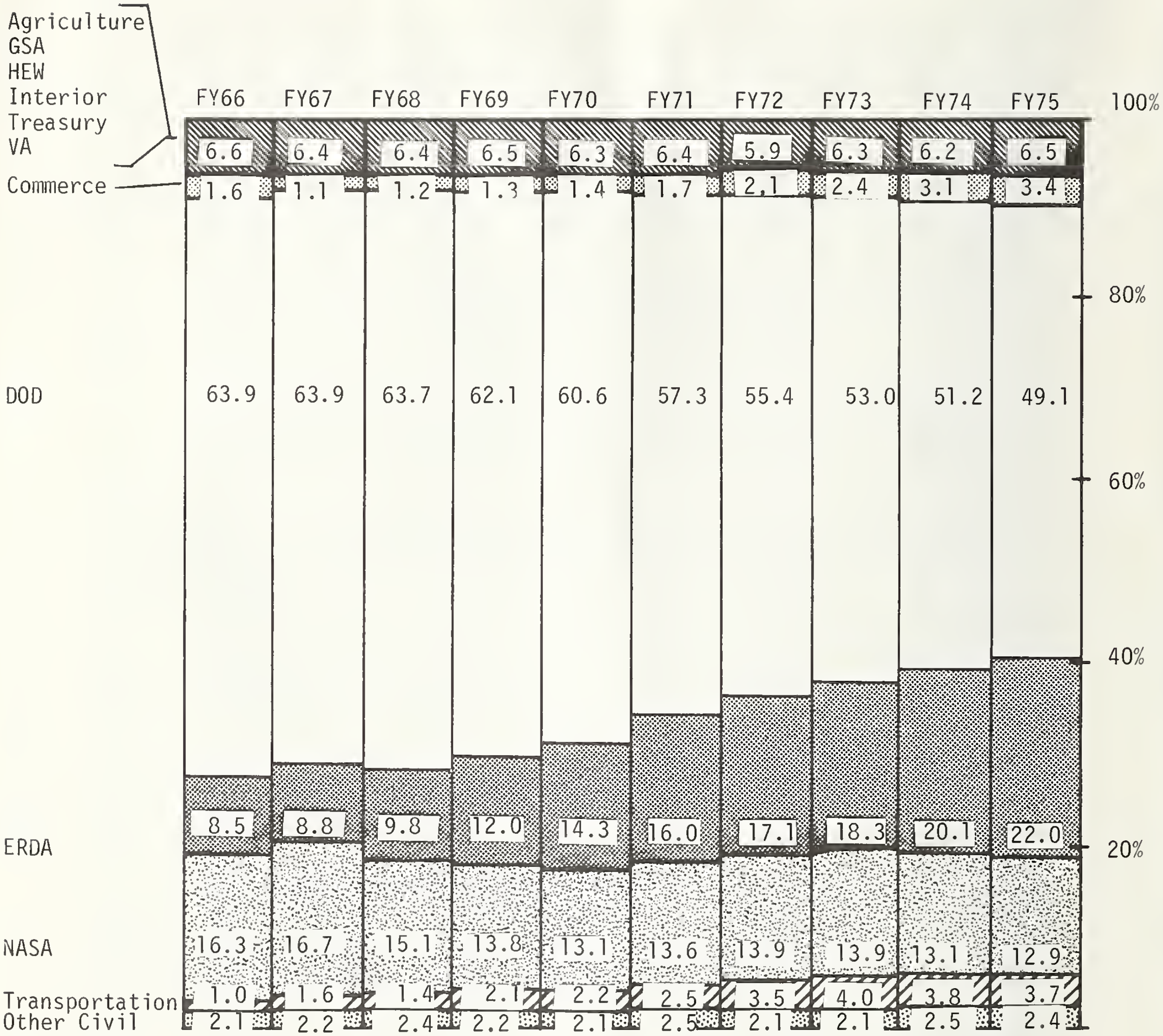


Figure 16

D. Analysis of annual Federal ADP costs by agency for the general management classification of computers

The figures for "Annual Federal ADP Costs by Agency," compiled for years FY65 through FY75, are presented in Figure 17. The dollars spent as a percentage of the total Federal ADP costs show comparative spending of agencies (Figures 18 and 19). The dollars for all of the above charts are in actual dollars spent, not constant dollars, and are only for those costs connected with computers in the general management classification (since these are the only costs which must be reported to GSA).

DOD's costs remain the highest, among all agencies representing 50% of all Federal ADP costs in 1975. However, in the last half of the sixties, DOD's costs represented 60% of Federal costs. ERDA, HEW, NASA and Treasury together have accounted for roughly 30% of all Federal ADP costs over the last decade. Although in number of computers Treasury has accounted for 1.5% to 2.0% of Federal computers, its expenditures have increased by a factor of 10, now representing 14% of all Federal costs. Similarly, HEW's percentage of Federal costs is 7.5% while its percentage of the Federal installed computer base is 1.5%.

Because the total Federal ADP costs roughly tripled from one billion to three billion over the last decade, agencies whose costs have doubled (DOD and ERDA) or remained the same (NASA) show a decrease in percentage of the annual Federal total cost, while those whose costs have more than tripled (notable GSA, HEW, and Treasury) show an increase in this percentage.

ANNUAL FEDERAL ADP COSTS BY AGENCY

General Management Classification

($ Millions)

	FY65[1]	FY66[1]	FY67	FY68	FY69	FY70	FY71	FY72	FY73	FY74	FY75
Agriculture	$ 15	$ 15	$ 21	$ 18	$ 24	$ 26	$ 34	$ 49	$ 50	$ 43	$ 51
Commerce	19	17	23	33	38	39	47	59	67	68	85
DOD	684	742	880	992	1093	1281	1417	1416	1499	1470	1568
ERDA	81	95	99	120	135	130	160	116	124	147	154
GSA	10	15	16	14	11	14	17	20	19	30	65
HEW	32	42	57	68	80	94	109	89	139	132	233
Interior			8	11	14	17	22	19	22	24	35
NASA	187	131	140	151	140	172	149	147	150	156	170
Transportation			12	14	14	17	23	24	32	31	39
Treasury	42	48	113	140	170	205	233	288	298	324	447
VA	16	17	18	20	30	40	32	37	44	39	52
Other Civil	46[2]	59[2]	58	72	81	90	139	163	207	198	201
Total ADP Cost	$1132	$1182	$1445	$1653	$1830	$2125	$2382	$2427	$2651	$2662	$3100

1. FY65, FY66 figures include special purpose computers as well.
2. 'Other Civil' category for FY65, FY66 includes Interior, Transportation, and FAA.

Source: Data for FY69 thru FY75 from GSA Inventory, FY75; Data for FY67 thru FY68 from GSA Inventory, FY72; Data for FY66, FY65 from BOB Inventories, FY66 and FY65, respectively [5].

Figure 17

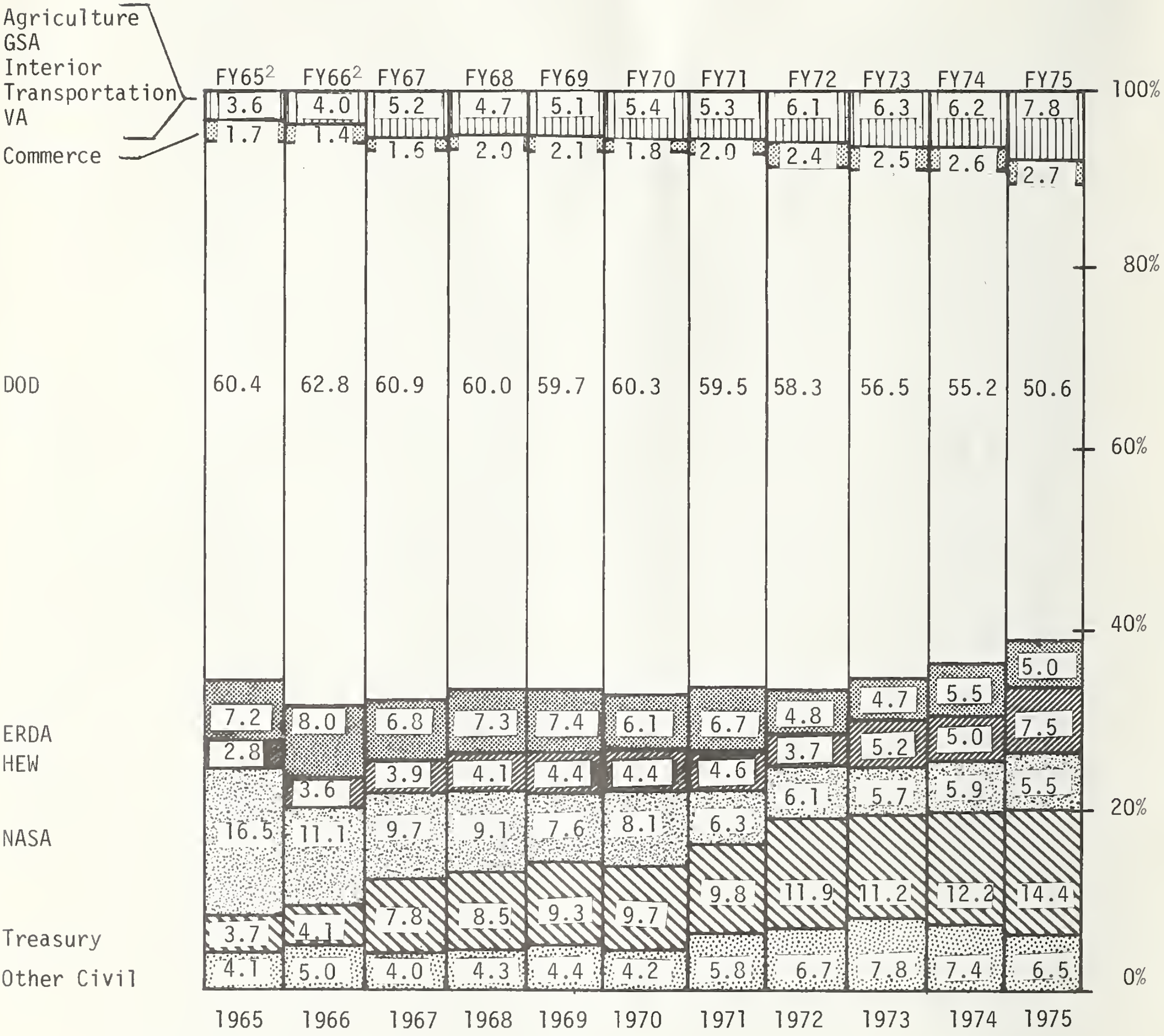
AGENCY PERCENTAGE OF ANNUAL FEDERAL ADP COSTS
General Management Classification

	FY65	FY66	FY67	FY68	FY69	FY70	FY71	FY72	FY73	FY74	FY75
Agriculture	1.33	1.27	1.45	1.09	1.31	1.22	1.43	2.02	1.88	1.62	1.64
Commerce	1.68	1.44	1.59	2.00	2.08	1.84	1.97	2.43	2.53	2.55	2.74
DOD	60.42	62.83	60.90	60.01	59.73	60.28	59.49	58.34	56.54	55.22	50.58
ERDA	7.16	8.04	6.85	7.26	7.38	6.12	6.72	4.78	4.68	5.52	4.97
GSA	.88	1.27	1.11	.85	.60	.66	.71	.82	.72	1.13	2.10
HEW	2.83	3.56	3.95	4.11	4.37	4.42	4.58	3.67	5.24	4.96	7.52
Interior			.55	.66	.76	.80	.92	.78	.83	.90	1.13
NASA	16.52	11.09	9.69	9.13	7.65	8.09	6.25	6.06	5.66	5.86	5.48
Transportation			.83	.85	.76	.80	,97	.99	1.21	1.16	1.26
Treasury	3.71	4.06	7.82	8.47	9.29	9.65	9.78	11.87	11.24	12.17	14.42
VA	1.41	1.44	1.25	1.21	1.64	1.88	1.34	1.52	1.66	1.47	1.68
Other Civil	4.06	5.00	4.01	4.36	4.43	4.24	5.84	6.72	7.81	7.44	6.48
Total Percentage	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Figure 18

AGENCY PERCENTAGE OF ANNUAL FEDERAL ADP COSTS

(General Management Classification[1])



1. FY65 and FY66 bars based on all ADP costs.
2. Interior and Transportation (including FAA) are included with Other Civil for FY65, FY66.

Figure 19

E. Analysis of Minicomputers in the Federal Government

A recent GAO report, Uses of Minicomputers in the Federal Government: Trends, Benefits, and Problems, looks at the uses of minicomputers in the Federal Government in the past, present and future and analyzes the problems and benefits that are attached to such uses. The basic statistics for "number of minicomputers in Government" are provided in a bar graph, "Number of Computers in the Federal Government by Computer Cost and by Fiscal Year" (Figure 20a). It should be noted that the figures given in this bar graph are rounded figures and thus do not match exactly the GSA totals given in Figure 1. Since GAO used as one of the definitions of minicomputer, "a simple computer system having a central processing unit which costs $50,000 or less," most of the computers on this chart in the category "under $50,000" are considered minicomputers.

This bar graph shows that in 1967 minicomputers represented about 26% of the Federal Government computers and in 1975 represented about 55% of the Federal computers. If the growth of minicomputers in relation to the total Federal inventory since FY70 is analyzed, the average growth rate has been about 3% of the Federal inventory. GAO states that "considerable growth has occurred in the lower-priced computers, whereas use of the middle-priced computers had decreased and use of the more expensive computers has remained fairly constant."*

To analyze the actual growth rate of the three categories of computers, the GAO bar graph was translated into numbers of CPUs (Figure 20b). When the number of CPUs is plotted on a line graph to show the growth rates of the three categories of computers (Figure 21), it can be seen that the computers costing under $50,000 are growing much faster than the other two categories.

The actual growth rate or increase in units compared to the installed base the year before was calculated for each year for all three categories (Figure 22). An average of 471 minicomputers, or computers costing less than $50,000, has been added per year over the past eight years giving an average yearly growth rate of 22%. For computers costing between $50,000 and $200,000 the average number of units with an average yearly growth rate of 3%. For the large computers costing over $200,000 the average number of units per year that are added to the installed base is 79.5 units, with an average yearly growth rate of 8%. Thus, numbers of minicomputers are growing, on an average, greater than twice as fast as either of the other two categories of computers.

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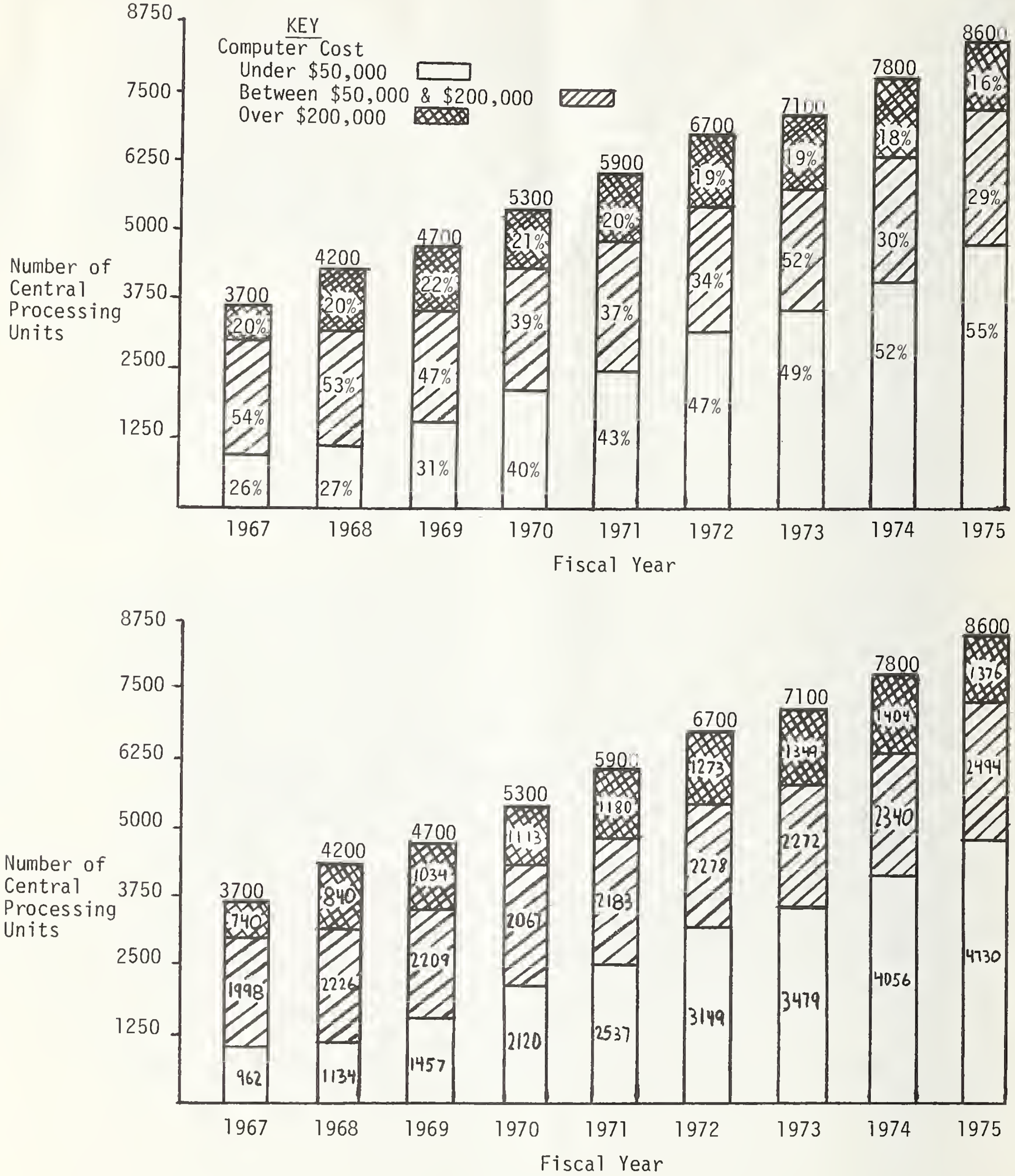
*GAO report, p. 6

NUMBER OF COMPUTERS IN THE FEDERAL GOVERNMENT BY COMPUTER COST AND BY FISCAL YEAR



Source: GAO report, p. 6

Figure 20

NUMBER OF COMPUTERS IN THE FEDERAL GOVERNMENT BY COMPUTER COST CATEGORY

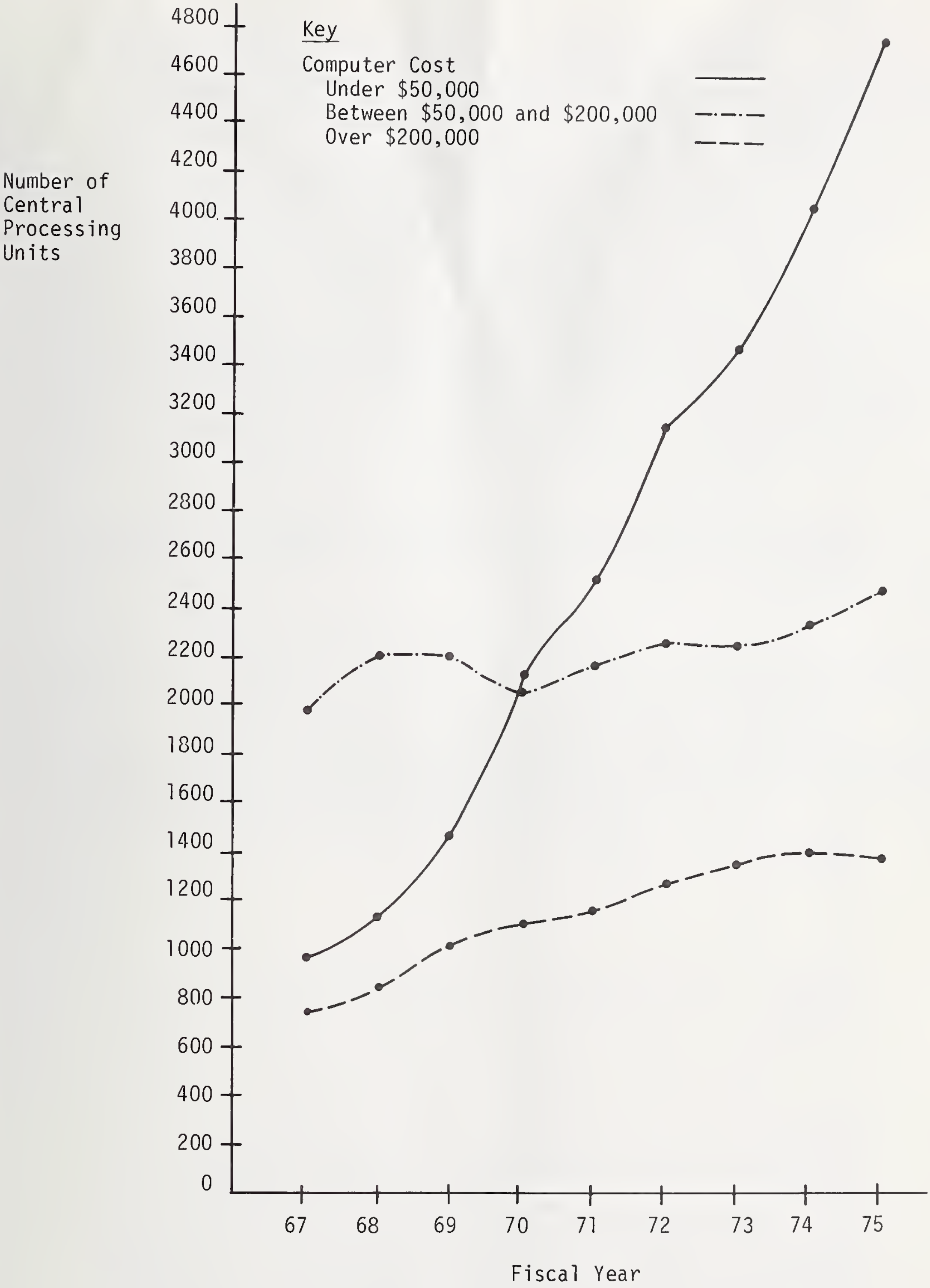


Figure 21

Growth Rate of Computers in the Federal Government by Computer Cost and by Fiscal Year

End of Fiscal Year	# Of CPUs under $50,000	# of CPUs added per year	Growth rate (%)	# of CPUs between $50,000 & $200,000	# of CPUs added per year	Growth Rate (%)	# of CPUs over $200,000	# of CPUs added per year	Growth Rate (%)
1967	962			1998			740		
		172	18		228	11		100	14
1968	1134			2226			840		
		323	28		-17	-.8		194	23
1969	1457			2209			1034		
		663	46		-142	-6		79	8
1970	2120			2067			1113		
		417	20		116	6		67	6
1971	2537			2183			1180		
		612	24		95	4		93	8
1972	3149			2278			1273		
		330	10		-6	-.3		76	6
1973	3479			2272			1349		
		577	17		68	3		55	4
1974	4056			2340			1404		
		674	17		154	7		-28	-2
1975	4730			2494			1376		
Average		471	22		62	3		79.5	8

Figure 22

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ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

The material in this report is a compilation of some of the data on the status of computer technology in the Federal Government. This compilation is a combination of existing statistics from Federal Government and computer industry sources, and original statistics based on these sources. Information is included on numbers of computers installed in the Federal Government, dollar value of computers installed, numbers of computers installed by agency, Federal ADP costs by agency and minicomputers in the Federal Government.

KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)* Federal Government computers; statistics; ADP costs; Federal minicomputers; Federal ADP statistics

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